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VOL. 10 No. 42 OCTOBER 14, 1960

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U. S. DEPARTMENT OF AGRICULTURE

# *Cooperative*
# ECONOMIC INSECT REPORT

*Issued by*

PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

# AGRICULTURAL RESEARCH SERVICE

# PLANT PEST CONTROL DIVISION

## SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

Volume 10 October 14, 1960 Number 42

# COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

**FALL ARMYWORM** continues damaging in Oklahoma and destructive in some fields of small grain and alfalfa across Tennessee. (p. 963). GRASSHOPPER CONTROL (Rangeland Cooperatively Treated During 1960 Season) (Map). (p. 964). GRASSHOPPERS causing damage to small grains in some areas of Idaho, New Mexico and Oklahoma. Economic numbers of SPOTTED ALFALFA APHID present in Butler Creek area of Umatilla County, Oregon; heavy in some alfalfa as far east as Claremore in northeast Oklahoma; increasing in central Arizona; counts 100-400 in Colorado; and causing some damage in Nebraska. (p. 965).

**FALL WEBWORM** heavily infesting pecan trees in northwest Louisiana. (p. 967).

Several species of FLIES of concern on cattle in Oklahoma and several new SCREW-WORM infestations reported in Louisiana. (p. 971).

New KHAPRA BEETLE infestation found in Phoenix area of Arizona (only known infestation remaining in State). (p. 971).

INSECT DETECTION: New North American records are red tick (Rhipicephalus evertsi evertsi) in Florida and a seed chalcid (Eumegastigmus transvaalensis) in California. (p. 970). New State records are a white-fringed beetle (Graphognathus leucoloma striatus) in Kentucky and an unidentified embiopteran in Oklahoma (this is first record of order in State). (p. 972). New county records are pink bollworm in St. Francis County, Arkansas (p. 968); European corn borer in Bath County, Virginia (p. 963); and walnut husk fly in Amador County, California (p. 967).

CORRECTIONS (p. 973).

SUMMARY OF INSECT CONDITIONS IN THE UNITED STATES - 1959

Ornamental and Shade Tree Insects

Ornamental Insects - (p. 975).
Shade Tree Insects - (p. 982).

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Reports in this issue are for week ending October 7, unless otherwise indicated.

## WEATHER OF THE WEEK ENDING OCTOBER 10

Pleasant autumn weather with mild sunny days and cool nights was the prevailing weather pattern over much of the Nation for the second consecutive week.

The warmest section of the country, relative to normal, was the northern Great Plains where weekly averages were as much as 9° above seasonal levels. Bismarck, North Dakota, had a high of 91° and Aberdeen, South Dakota, 95°. The week was cooler than normal in the Great Lakes region and Northeast, by as much as 6° at a few stations in the latter area.

Scattered freezes and frost occurred across the entire northern section of the country, with a low of 15° at Big Piney, Wyoming. A few scattered sections even in extreme northern areas, however, have not yet had heavy frost.

The northern Great Plains also was part of the most extensive dry area for the week. Virtually no measurable precipitation fell between the Great Lakes and the Rockies and in the central Great Plains as far south as northern Oklahoma. In the Pacific Northwest warm, sunny days the first half of the week were followed by cooler, showery weather, with precipitation amounts generally ranging from a few hundredths to 1/2 inch. Snow fell in the higher mountains and most ranges in Montana are covered.

The first autumn storm in the Far Southwest brought substantial precipitation to much of that area during the weekend. Amounts totaled over 2 inches in the north central and eastern mountain sections of Arizona, and from 1/3 to over 1 inch over most of the western half of New Mexico.

The week's heaviest and most frequent precipitation covered an area that extended from southern Illinois and eastern Texas to the Atlantic coast. Rain fell in this area on 3 to 6 days, and totals generally ranged from 1/2 to over an inch, although over 2 inches were measured in the southern Appalachians, eastern Mississippi, and western Alabama. (Summary supplied by U. S. Weather Bureau).

## CEREAL AND FORAGE INSECTS

FALL ARMYWORM (Laphygma frugiperda) - OKLAHOMA - Damaging infestations continued in some wheat fields in northwest area, with counts ranging up to 2-4 per linear foot in infested fields. Counties affected include Woodward, Major and Beaver. Damage apparently declined in most of other areas of State. No damage noted in fields checked in northeast area. (Okla. Coop. Sur.). ARKANSAS - Larvae present in some fields of fall-sown small grains.(Ark. Ins. Sur.). TENNESSEE - Found in destructive numbers in scattered small grain and alfalfa fields across State. (Mullett). VIRGINIA - Medium on small grains, locally, at South Lebanon, Russell County. Only known occurrence in county to date. (Altizer, Sept. 26). Third-instar larvae attacking rye, locally, at Eastville, Northampton County. (Hofmaster, Oct. 5).

EUROPEAN CORN BORER (Pyrausta nubilalis) - VIRGINIA - Found for first time in Bath County near Warm Springs. Det. by H. W. Capps. (Stockbridge, Walsh, Rowell; Aug. 11). Medium, locally, on corn at Tidewater Trail, Spotsylvania County. (Kash, Sept. 27). WEST VIRGINIA - The 1960 fall abundance survey completed in 15 counties. State average was 58 borers per 100 plants. (W. Va. Ins. Sur.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - CALIFORNIA - Heavy populations occurring on corn in Vista, San Diego County. (Cal. Coop. Rpt.).

CORN EARWORM (Heliothis zea) - WYOMING - Few larvae found in corn throughout Laramie County. (Fullerton). WISCONSIN - Most abundant in midseason to late-planted corn; majority of larvae in second and third instars. (Wis. Coop. Sur., Sept. 30). DELAWARE - Larvae generally present on soybeans and alfalfa; counts vary from present to one per sweep in New Castle and Kent Counties. (Burbutis, Mason).

CORN LEAF APHID (Rhopalosiphum maidis) - NEW MEXICO - Spotty, moderate to heavy infestations still being found in corn in Socorro, Sierra and Dona Ana Counties. (N. M. Coop. Rpt.). IDAHO - Adults and nymphs collected from foxtail in Tammany area, Nez Perce County, September 27. (Portman).

RUSTY PLUM APHID (Hysteroneura setariae) - ARIZONA - Infestations medium to heavy in some sorghum in central area. Infestations considerably lower than in 1959, however. (Ariz. Coop. Sur.).

SORGHUM WEBWORM (Celama sorghiella) - OKLAHOMA - Damaging late fields of grain sorghum in east central and northeast areas; counts 40-100 per head in limited number of late fields in those areas. (Okla. Coop. Sur.).

SORGHUM MIDGE (Contarinia sorghicola) - OKLAHOMA - Adults common in latest maturing heads in a field of grain sorghum in Ottawa County; counts ranged 10-25 per head. (Okla. Coop. Sur.).

DESERT CORN FLEA BEETLE (Chaetocnema ectypa) - CALIFORNIA - Medium infestations on corn in Thermal, Riverside County. (Cal. Coop. Rpt.).

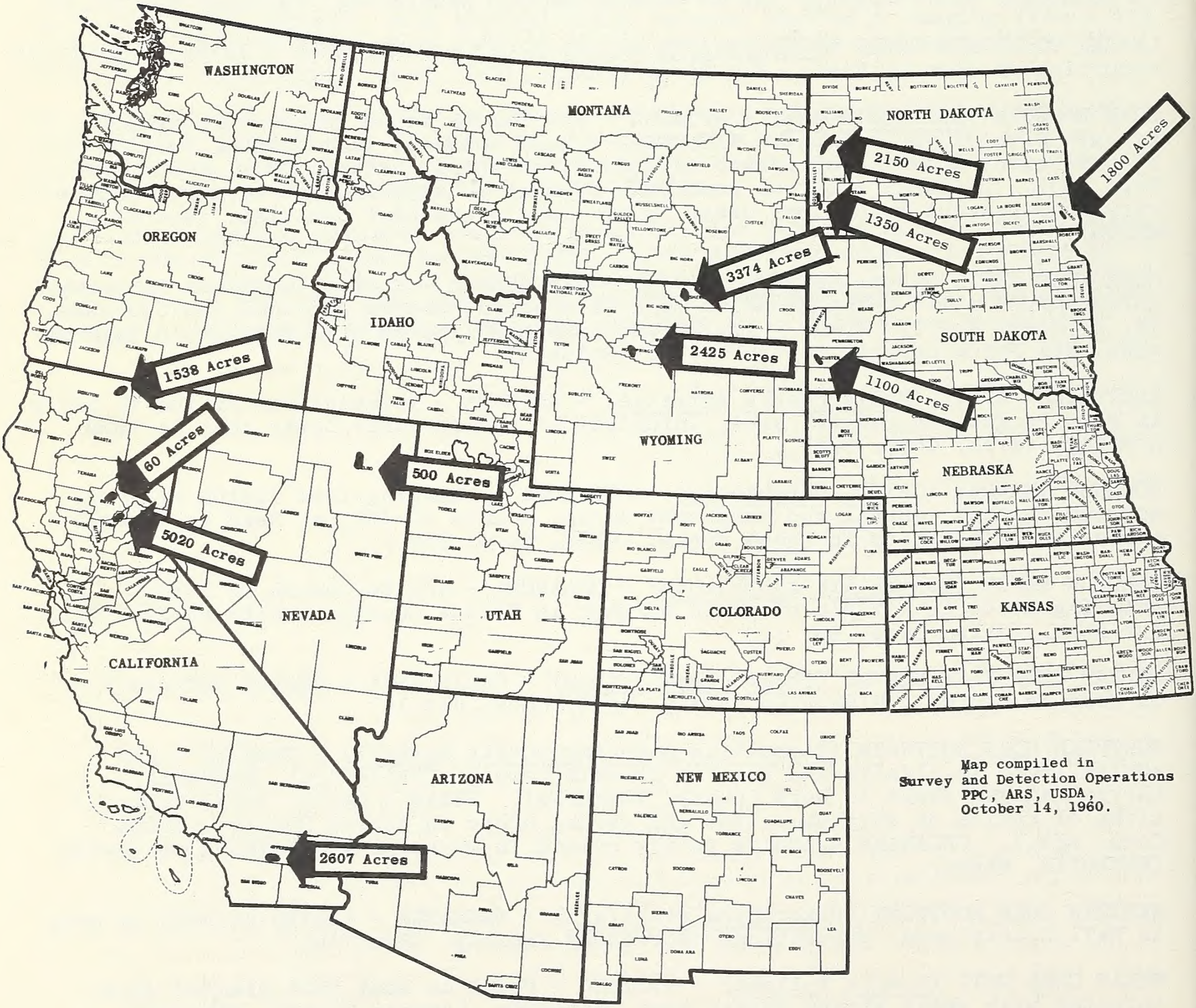
SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - WYOMING - Few adults found in alfalfa and corn in Laramie County. (Fullerton). NEBRASKA - Larvae damaged wheat in Burt County. (Roselle). TEXAS - Heavy, local infestations of adults on sorghum,cotton and garden crops in Scurry County. (Texas Coop. Rpt.). DELAWARE - Adults fairly common in soybeans and alfalfa statewide. (Burbutis, Mason).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - NEBRASKA - Adults present in corn in Hall County area; populations decreasing rapidly. (Roselle).

WHEAT CURL MITE (Aceria tulipae) - WYOMING - Found on most fall-planted wheat infected with wheat streak mosaic near Carpenter, Laramie County. (Shannon, Fullerton).

# GRASSHOPPER CONTROL

## Rangeland Cooperatively Treated During 1960 Season



Map compiled in
Survey and Detection Operations
PPC, ARS, USDA,
October 14, 1960.

A FIELD CRICKET (*Acheta* sp.) - WISCONSIN - Damage not assessed as being significant, although populations are high in many areas. (Wis. Coop. Sur., Sept. 30).

GREEN JUNE BEETLE (*Cotinis nitida*) - VIRGINIA - Infesting lawns, locally, in Goochland, Wythe and Lunenburg Counties. (Tarpley et al., Sept. 30). NORTH CAROLINA - Larvae injuring pasture in Rutherford County; emerging from lawns in Wake County after heavy rains and crawling on drives and sidewalks. (Wilson, Moore, Farrier). TENNESSEE - Larvae prevalent in newly seeded fields over State. (Mullett).

JAPANESE BEETLE (*Popillia japonica*) - VIRGINIA - Spotted and medium in some lawns in Stanley, Page County; 15-20 per square foot in one lawn inspected. (Saunders, Jr.).

GRASSHOPPERS - IDAHO - Relatively small populations causing rather large amount of damage to fall wheat in Fremont County due to continued dry weather. Except for one field almost completely defoliated, damage principally to margins of winter wheat. As soil moisture not too plentiful, recovery of wheat not too rapid; replanting of some wheat required. Populations along margins 3-5 per square yard; up to 10 in more favorable habitats. Conservation Reserve lands responsible for large share of populations that destroyed top vegetative ground cover and 70 acres of wheat where situation most severe. Populations within field ranged 3-10 per square yard and 5-10 in adjacent Conservation Reserve lands. (Evans). NEW MEXICO - Adult survey conducted during September; 31,400 acres of cropland and 140,000 acres of rangeland found with moderate or more populations. Rangeland infestations mostly in eastern counties. Cropland infestations mostly on dry-land farms in eastern counties and in irrigated areas in middle and northern Rio Grande Valley. Conditions for egg deposition favorable over most of infested area. Infestations in northeastern Curry County causing minor damage along margins of wheat fields. (N. M. Coop. Rpt.). NORTH DAKOTA - Egg survey in southeast counties generally supported infestation level of adult survey. Predation by bombyliid and carabid larvae high in southern border counties. (N. D. Ins. Sur.). WISCONSIN - Adults appear very abundant in several sections. Most mating of *Melanoplus femur-rubrum* and *M. differentialis* completed; egg laying continues during warm periods. (Wis. Coop. Sur., Sept. 30). OKLAHOMA - Several species damaging margins of some small grain fields in Major, Woodward and Beaver Counties, as much as 50 feet in from fence rows in some fields checked. Also reported damaging fields of small grain in Payne, Caddo and Atoka Counties. (Okla. Coop. Sur.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - OREGON - Observed in all fields of alfalfa checked in Malheur County from west of Homedale to Vale and north to Ontario. Populations did not exceed 3 per sweep; fewer than 1 per sweep in most fields. Economic numbers present in Butler Creek area of Umatilla County; infested fields show noticeable injury. (Capizzi). COLORADO - Ranged 100-150 per 100 sweeps of alfalfa in Bent, Crowley, Otero and Prowers Counties and 300-400 per 100 sweeps in Pueblo County. (Colo. Ins. Sur.). ARIZONA - Increasing in central area alfalfa. (Ariz. Coop.Sur.). TEXAS - Light on alfalfa in Brazos and Burleson Counties. (Randolph). OKLAHOMA - Heavy, up to 150 per sweep, in some alfalfa as far east as Claremore in northeast area; light to heavy infestations common west and south of that point. This continues to present a threat to fields of fall-seeded alfalfa over most of State. Populations declined somewhat in fields where localized rains occurred during past week. Counties reporting light to heavy infestations were Tillman, Greer, Stephens, Johnson, Caddo, Grady, Seminole, Pawnee, Kay, Washington and Rogers. (Okla. Coop. Sur.). NEBRASKA - Counts per sweep in alfalfa by counties as follows: Jefferson - 0.03; Thayer - 0.3; Nuckolls - 0.03; Webster - 18.2; Franklin - 26.6-176.5; Harlan - 48-51; Furnas - 21.8-25.6; Red Willow - 32-37.6; Hitchcock - 22.6-51; Dundy - 36; Kearney - 1.3; Adams - 0.4; Fillmore - 0.07. Some yellowing in Red Cloud area of Webster County, where counts 18.2 per sweep, and general yellowing in Franklin area of Franklin County, where counts 176.5 per sweep. (Manglitz).

PEA APHID (Macrosiphum pisi) - IDAHO - Remains generally abundant in Bingham County, although populations in heavily infested fields have declined. (Bishop, Sept. 30). WYOMING - Averaged 10 per 25 sweeps in alfalfa in Laramie County. (Fullerton). DELAWARE - Counts averaged 5 per 10 sweeps in Sussex County, 10 per 10 sweeps in Kent County and 20 per sweep in New Castle County in alfalfa. (Burbutis, Mason).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Infestations down in alfalfa statewide; however, populations still high in some fields. (Ariz. Coop. Sur.). TEXAS - Averaged 15-20 per 5 sweeps in test plots in Brazos and Burleson Counties. (Randolph). OKLAHOMA - Common in alfalfa across State; counts ranged 0.5-3 per sweep. (Okla. Coop. Sur.). ALABAMA - Light to moderate infestations in alfalfa in Lee County; damaged one 10-acre field. (Grimes).

LYGUS BUGS (Lygus spp.) - WYOMING - Adults averaged 15 per 25 sweeps in alfalfa in Laramie County. (Fullerton). OKLAHOMA - L. lineolaris common in alfalfa throughout State, with populations apparently showing a gradual increase in most areas. Counts ranged 0.5-3 per sweep. (Okla. Coop. Sur.). DELAWARE - Adults and nymphs of L. lineolaris present in alfalfa and soybeans over State; adults present in cover crops in Kent County. (Burbutis, Mason).

PLANT BUGS (Adelphocoris spp.) - DELAWARE - Adults and nymphs of A. rapidus present on alfalfa over State, with counts averaging 3-4 per 10 sweeps in Kent and Sussex Counties. Adults of A. lineolatus present in alfalfa in New Castle County. (Burbutis, Mason).

LEAFHOPPERS - ALABAMA - Various species found in extremely heavy numbers in alfalfa in Lee County. (Grimes).

MEADOW SPITTLEBUG (Philaenus leucophthalmus) - WEST VIRGINIA - Survey in alfalfa and clover in 17 counties completed. State average 2.2 per sweep. (W. Va. Ins. Sur.). DELAWARE - Adults present in alfalfa in New Castle County. (Burbutis, Mason).

SOYBEAN INSECTS - SOUTH CAROLINA - Infestations nil or very light in Berkeley County and no outbreak noted in Colleton County. Many farmers treating in Marlboro County, with more defoliation noted than ever before. Less than 10 percent of beans treated in Dorchester County. Trichoplusia ni present in most fields in Sumter County and treatments excellent and preventing insect damage in Clarendon, Charleston and Dillon Counties. Insects varied from field to field and farmers advised to use individual judgement in control measures in Florence County. Most every insect known to attack beans present in moderate numbers in most young fields in Lee County, with a few fields showing large numbers of Heliothis zea. Larval specimens collected on soybeans in Allendale County on August 25 by W. C. Nettles were determined as follows: Anticarsia gemmatalis - 1; Spodoptera exigua - 2; Trichoplusia ni - 7; T. oxygramma - 25; Pseudoplusia includens - 1; Prodenia eridania - 3. Most significant find in the determinations is that of 33 loopers; 25 were T. oxygramma. (Nettles et al., Sept. 28).

SADDLEBACK CATERPILLAR (Sibine stimulea) - NORTH CAROLINA - Feeding on peanuts in Hoke County and on undetermined host in Wake County. (Chadwick, Farrier).

MEXICAN BEAN BEETLE (Epilachna varivestis) - DELAWARE - Adults and larvae common on soybeans in southeast Sussex County. (Burbutis, Mason).

## FRUIT INSECTS

CODLING MOTH (Carpocapsa pomonella) - OREGON - Partial third generation appeared in Jackson County, first week of September. Additional controls applied to prevent late entries into fruit. (Gentner). WEST VIRGINIA - Caused 5 percent loss in some apple orchards in eastern panhandle area. (W. Va. Ins. Sur.).

WOOLLY APPLE APHID (Eriosoma lanigerum) - ALABAMA - Caused extremely severe damage to roots of apple trees. (Guyton). CALIFORNIA - Heavy on plum and apple roots in a nursery in Mountain View, Santa Clara County. (Cal. Coop. Rpt.).

APHIDS - COLORADO - Fall migrants of Myzus persicae colonizing on peach trees and fall migrants of Aphis pomi and Anuraphis roseus colonizing on apples in Mesa and Delta Counties. (Colo. Ins. Sur.).

A COREID (Liorhyssus sp.) - CALIFORNIA - Heavy on avocados in Fallbrook, San Diego County. (Cal. Coop. Rpt.).

PEAR PSYLLA (Psylla pyricola) - OREGON - Resistance to organic phosphate insecticides continued through 1960 season in Jackson County. (Gentner). CALIFORNIA - Larvae and adults occurring in pear culls in Concord, Contra Costa County. (Cal. Coop. Rpt.).

PEAR LEAF BLISTER MITE (Eriophyes pyri) - IDAHO - Infestations reported on pears at Orofino, Clearwater County. (Fitzsimmons, Sept. 30).

ORCHARD MITES - WEST VIRGINIA - Unspecified species caused some damage to apples in localized areas of eastern panhandle section of State. (W. Va. Ins. Sur.). CALIFORNIA - Bryobia rubrioculus heavy on almonds in Fresno, Fresno County. (Cal. Coop. Rpt.).

FALL WEBWORM (Hyphantria cunea) - LOUISIANA - Pecan trees in most northwest parishes heavily infested, with nests ranging as high as 12 per tree. (Spink).

HICKORY SHUCKWORM (Laspeyresia caryana) - ALABAMA - Present in Mayhan variety pecans in Lee County; inside portion of shucks completely destroyed; 7 larvae taken from one shuck. (Guyton).

PECAN WEEVIL (Curculio caryae) - ALABAMA - Present in seedling pecans in Lee County; infestations extremely high with respect to number of pecans on trees. (Guyton).

WALNUT HUSK FLY (Rhagoletis completa) - CALIFORNIA - Larvae light in peach fruit in Santa Paula, Ventura County. Adults taken in Frick trap at Pioneer, Amador County, for first record for county. (Cal. Coop. Rpt.).

## TRUCK CROP INSECTS

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Infestations have increased in cabbage in central area; averaged 2 larvae per plant in some fields. Egg counts in lettuce low. (Ariz. Coop. Sur.). NEW MEXICO - Occasional larva being found in lettuce fields in Mesilla Valley; no appreciable damage. (N. M. Coop. Rpt.). VIRGINIA - Numerous on Eastern Shore. (Hofmaster). MARYLAND - Damaging commercial spinach crop in Glenarm area, Baltimore County. (U. Md., Ent. Dept.). DELAWARE - Larvae on carrots in southern New Castle County, causing light injury. (Burbutis, Mason).

IMPORTED CABBAGEWORM (Pieris rapae) - OREGON - Adult activity favored by warm weather, permitting egg deposition, resulted in larval infestations of broccoli and cauliflower in Gresham, Woodburn and Hillsboro areas during late September. (Hanna). VIRGINIA - Numerous on Eastern Shore, although practically nonexistent the previous week. (Hofmaster).

DIAMONDBACK MOTH (Plutella maculipennis) - VIRGINIA - Larvae common on broccoli on Eastern Shore. (Hofmaster).

BEET ARMYWORM (Spodoptera exigua) - CALIFORNIA - In San Diego County, heavy on celery in Lemon Grove area and medium on peppers in Spring Valley. (Cal. Coop.Rpt.).

TOMATO PINWORM (Keiferia lycopersicella) - CALIFORNIA - Heavy on tomato at Chula Vista, San Diego County. (Cal. Coop. Rpt.).

TOMATO FRUITWORM (Heliothis zea) - COLORADO - Eggs average 6.6 per 100 tomato leaves in Bent, Crowley, Otero, Prowers and Pueblo Counties; about 13 percent of eggs parasitized. (Colo. Ins. Sur.). VIRGINIA - Common on broccoli on Eastern Shore. (Hofmaster).

BLACK CUTWORM (Agrotis ipsilon) - COLORADO - Larval damage to potato tubers in Weld County; 10-15 percent of tubers in some areas of fields unmarketable. (Colo. Ins. Sur.).

GREEN PEACH APHID (Myzus persicae) - IDAHO - Large alate populations in vicinity of potato fields in Bingham and Caribou Counties, week ending September 30. Averaged 100 per leaf in field near Grace, Caribou County, resulting in death of considerable plants. Similar situation occurred recently in field south of Aberdeen, Bingham County. (Bishop). UTAH - Populations increased in late season before harvest of late potatoes in northern portion of State. (Knowlton).

CABBAGE APHID (Brevicoryne brassicae) - OREGON - Alates migrating into broccoli and causing scattered infestations in Gresham area, Multnomah County, September 25. (Hanna). DELAWARE - Abundant on some nearly mature cabbage plants in central Kent County. (Burbutis, Mason).

APHIDS - OKLAHOMA - Several species medium to heavy on turnip, mustard, cucumber and other crops in localized areas in southern half of State. (Okla. Coop. Sur.).

HARLEQUIN BUG (Murgantia histrionica) - VIRGINIA - Common in some areas of Eastern Shore on broccoli. (Hofmaster).

SQUASH BUG (Anasa tristis) - NEW MEXICO - Large numbers of adults and nymphs congregating on winter squash in Dona Ana County fields. (N. M. Coop. Rpt.).

WHITEFLIES - MARYLAND - Immature forms of unspecified species abundant on beans at Hurlock, Dorchester County. (U. Md., Ent. Dept.).

FLEA BEETLES - OHIO - Larvae of unspecified species sufficiently damaged 15 acres of turnips to make them unsaleable. A soil insecticide was used in the spring of 1960 as well as in spring of 1959. This is second instance of serious larval damage in a commercial turnip field where a soil insecticide had been used. (Wilson, Holdsworth).

RASPBERRY CANE BORER (Oberea bimaculata) - TEXAS - Larvae causing light damage to blackberry vines in Brazos County. (Alex).

## COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - ARKANSAS - Two larvae found in gin trash in St. Francis County in east central area. This is first record for this year and for this county. (Ark. Ins. Sur.). ARIZONA - Through October 7, no specimens found in central area. In Graham County, which was not in treatment area, field infestations found as follows: Solomon area - 5 fields infested, 400-600 bolls checked in each field, with a total of 20 larvae taken; Safford area - 2 fields infested, 4 larvae taken in 2 fields from a total of 1,300 bolls. (Ariz. Coop. Sur.). NEVADA - Green boll survey negative in Pahrump Valley, Nye County. (Coop. Rpt., Sept. 30).

BOLLWORMS (Heliothis spp., et al.) - NEVADA - Number of infested and/or damaged bolls in Pahrump Valley, Nye County, extremely light in comparison with other cotton-growing areas, but equaled 1959 high for State. (Coop. Rpt., Sept. 30).

CABBAGE LOOPER (*Trichoplusia ni*) - LOUISIANA - Infestations scattered in northwest fields; larvae heavily diseased. (Spink).

COTTON LEAFWORM (*Alabama argillacea*) - LOUISIANA - Heavy in several fields in Caddo Parish; larvae ranged 1-6 per plant in one field. Large flights of adults also noted. (Spink). SOUTH CAROLINA - First adult trapped at Clemson on September 27; no damage to cotton expected. Defoliation of cotton at this stage would be beneficial. (Nettles et al., Sept. 28).

SALT-MARSH CATERPILLAR (*Estigmene acrea*) - ARIZONA - Populations continue high in many cotton fields in central and southwestern areas. (Ariz. Coop. Sur.).

SPIDER MITES (*Tetranychus* spp.) - NEVADA - Moderate to heavy in several fields in Pahrump Valley, Nye County. (Coop. Rpt., Sept. 30).

## FOREST, ORNAMENTAL AND SHADE TREE INSECTS

DOUGLAS-FIR BEETLE (*Dendroctonus pseudotsugae*) - IDAHO - Damage located on 140 acres in Fern Creek, northeast of Lowman, Boise County. Infested trees to be salvaged before spring emergence. New infestation exists on land administered by Bureau of Land Management northwest of Bannock Peak, Power County. Previous damage inconspicuous; infestation appears confined to Swede Canyon. Control by logging and supplemental use of insecticide being considered. Trend of infestations is upward throughout many areas. (Furniss).

NANTUCKET PINE MOTH (*Rhyacionia frustrana*) - OKLAHOMA - Live larvae and pupae infesting 44 percent of tips of pines checked in Stillwater area; of these, 69 percent were pupae, 31 percent larvae. (Okla. Coop. Sur.).

RED-HEADED PINE SAWFLY (*Neodiprion lecontei*) - VIRGINIA - Light and spotted on loblolly pine in Fluvanna County. Attacking small pines in Duffield section, Scott County; causing considerable damage to young stock in memorial settings on school grounds. (Watts, Tarpley, Moore; Sept. 28). MARYLAND - Infesting Scotch pine at Sparks, Baltimore County. (U. Md., Ent. Dept.). WEST VIRGINIA - Caused heavy defoliation of Virginia pine in one area of Monongalia County. (W. Va. Ins. Sur.).

A PINE APHID (*Essigella californica*) - CALIFORNIA - Infesting yellow pine in Paradise, Butte County. (Cal. Coop. Rpt.).

COOLEY SPRUCE GALL APHID (*Chermes cooleyi*) - NEW MEXICO - Galls extremely numerous on Colorado blue spruce in area near Black Lake, Colfax County. (N. M. Coop. Rpt.).

BALSAM TWIG APHID (*Mindarus abietinus*) - UTAH - Damaging fir trees locally in Logan Canyon and on summit of Wellsville Mountains in northern portion of State. (Knowlton).

PINE NEEDLE SCALE (*Phenacaspis pinifoliae*) - NEW MEXICO - Spotty infestations found in several areas in Carson National Forest in Colfax, Taos, Mora and San Miguel Counties. (N. M. Coop. Rpt.).

ASIATIC OAK WEEVIL (*Cyrtepistomus castaneus*) - WEST VIRGINIA - Moderate to heavy on various hosts in central and southern counties. (W. Va. Ins. Sur.).

VARIABLE OAK LEAF CATERPILLAR (*Heterocampa manteo*) - OKLAHOMA - Defoliating red, white, black and post oaks in Pushmataha County. (Okla. Coop. Sur.).

TWIG GIRDLER (*Oncideres cingulata*) - OKLAHOMA - Damaging shade trees throughout central, north central and northeastern areas. (Okla. Coop. Sur.).

HICKORY HORNED DEVIL (Citheronia regalis) - WEST VIRGINIA - Abundant on hardwoods in Kanawha County. (W. Va. Ins. Sur.).

BAGWORM (Thyridopteryx ephemeraeformis) - VIRGINIA - Common on pines, hemlock, arborvitae and other evergreens in all sections of Wythe County. (Bird, Sept. 28).

LEAF CRUMPLER (Acrobasis indigenella) - CALIFORNIA - Larvae heavy on cotoneaster in San Diego, San Diego County. (Cal. Coop. Rpt.).

APHIDS - CALIFORNIA - Myzocallis ulmifolii exceptionally heavy on street and ornamental elms in Sacramento, Sacramento County. Honeydew so heavy that sidewalks and streets are gummy; sooty mold developing and some souring. This is late in season for heavy populations of this aphid. (Cal. Coop. Rpt.). NEVADA - Periphyllus negundinis moderate to heavy on boxelder in Reno-Sparks, Washoe County. Various species also moderate to heavy on ornamental shrubs and flowers in southern portion of county. (Bechtel et al., Sept. 30). MARYLAND - Melanocallis caryaefoliae injurious to hickory foliage at Bethesda, Montgomery County. (U. Md., Ent. Dept.).

AZALEA LACE BUG (Stephanitis pyrioides) - VIRGINIA - Widespread on azaleas at Manassas, Prince William County. (Trenary, Tarpley; Sept. 23).

COCCIDS - NORTH CAROLINA - Ceroplastes sp. infesting chrysanthemum, rose, crabapple, apple, camelia and other plants in Bertie County. (Jones, Farrier). TEXAS - Icerya purchasi heavy on pittosporum in Comanche County (Dixon) and moderate to heavy on mimosa and pittosporum in Bryan-College Station area, Brazos County. (Newton). MARYLAND - Lepidosaphes ulmi heavy on street maples at several Prince Georges County localities. (U. Md., Ent. Dept.).

A SEED CHALCID (Eumegastigmus transvaalensis) - CALIFORNIA - Medium in berries of California peppertree (Schinus molle) in San Diego, San Diego County. This is first record for the State and for North America. Collected by R. Rinder. Det. by B. D. Burks and confirmed by British Museum. (Cal. Coop. Rpt.).

A WHITEFLY - ALABAMA - Heavy infestations of an unspecified species found on ornamentals in the Selma area of Dallas County. (Granberry).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - IDAHO - Severe on Cornus florida at Orofino, Clearwater County. (Portman, Sept. 30).

## INSECTS AFFECTING MAN AND ANIMALS

RED TICK (Rhipicephalus evertsi evertsi) - FLORIDA - Found for first time in North America at Boca Raton, Palm Beach County. Specimens found in area of approximately 160 acres in animal compound ("Africa U.S.A."). The species is a carrier of several exotic diseases, including cattle fever, which has been identified from North America. (Anim. Dis. Erad. Div., Oct. 4).

EAR TICK (Otobius megnini) - SOUTH DAKOTA - Still being found on untreated native cattle in herd near Porcupine. This is the original herd where the tick was first discovered. (Hantsbarger).

A TICK (Dermacentor sp., probably albipictus) - OKLAHOMA - Heavy, 100 larvae and nymphs per animal, on 10 head of range cattle checked in Pushmataha County. (Okla. Coop. Sur.).

BLACK WIDOW SPIDER (Latrodectus mactans) - UTAH - Several found recently about homes at Logan, Cache County. (Knowlton).

SCREW-WORM (*Callitroga hominivorax*) - LOUISIANA - New infestations by parish were as follows: Franklin - 8; Rapides - 1; Red River - 3; Richland - 2. (Spink). OKLAHOMA - Continued to cause concern in Haskell, Stephens and Jefferson Counties. (Okla. Coop. Sur.).

FACE FLY (*Musca autumnalis*) - VIRGINIA - Survey during period September 26-29 gave negative results in Bedford, Appomattox, Prince Edward, Buckingham, Powhatan, Hanover, Goochland, Dinwiddie, Brunswick and Lunenburg Counties. (Tarpley). NORTH DAKOTA - Surveys now underway to determine distribution within State. (N. D. Ins. Sur.).

HOUSE FLY (*Musca domestica*) - OKLAHOMA - Counts averaged 40 per animal on 70 head of beef cattle checked in Pushmataha County. Continued to cause concern in McCurtain County and to enter major buildings in increasing numbers in Stillwater area. (Okla. Coop. Sur.). SOUTH DAKOTA - Populations abundant in eastern part of State. (Hantsbarger).

STABLE FLY (*Stomoxys calcitrans*) - OKLAHOMA - Heavy, 15 per animal, on 70 head of beef cattle in Pushmataha County. Populations increasing in Payne County area. (Okla. Coop. Sur.).

HORN FLY (*Siphona irritans*) - OKLAHOMA - Populations ranged 100-300 per animal on most range cattle in north central and northeast areas. Counts averaged 600-750 per animal on 100 head of range cattle in Pushmataha County and continued to cause concern in Muskogee, Haskell, McCurtain, Choctaw, Atoka, Seminole, Love, Stephens and Pawnee Counties. (Okla. Coop. Sur.).

HORSE BOT FLIES (*Gasterophilus* spp.) - OKLAHOMA - Medium to heavy egg laying noted on horses in north central and northeast areas. Somewhat lighter than noted at same time in 1959. (Okla. Coop. Sur.).

HORSE FLIES - OKLAHOMA - Populations of several species continue to decline in northeast and east central areas. Counts averaged 5-6 per animal on 100 head of range cows in Pushmataha County. Continued to cause concern in Seminole and Choctaw Counties. (Okla. Coop. Sur.).

MOSQUITOES - OKLAHOMA - Unspecified species causing annoyance to residents in eastern half of State. (Okla. Coop. Sur.). DELAWARE - *Psorophora ciliata* adults quite common statewide. (Burbutis, Mason).

FLEAS - TENNESSEE - Quite common around homes over State. (Mullett).

HOG LOUSE (*Haematopinus suis*) - OKLAHOMA - Heavy, averaged 45 per animal, on 10 head of hogs in Pushmataha County. (Okla. Coop. Sur.).

PUSS CATERPILLAR (*Megalopyge opercularis*) - SOUTH CAROLINA - Stung man at Easley; specimen determined on September 26. Victim had cardiac spasm of some four hours duration and ill for a 24-hour period. (Nettles et al., Sept. 28).

SADDLEBACK CATERPILLAR (*Sibine stimulea*) - TENNESSEE - Many complaints of stings coming in from over the State. (Mullett).

## STORED-PRODUCT INSECTS

KHAPRA BEETLE (*Trogoderma granarium*) - ARIZONA - New infestation found in Phoenix area, Maricopa County; treatment being applied. This is only known infestation in State. (Ariz. Coop. Sur.). NEW MEXICO - No infestations found. (N. M. Coop. Rpt.).

DERMESTIDS (*Trogoderma* spp.) - NEW MEXICO - Unusually large numbers of *T. sternale*, *T. plagifer*, *T. parabile* and *T. inclusum* being found. (N. M. Coop. Rpt.).

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - IDAHO - Infesting a farm grain elevator and a commercial feed mill in Bingham County. (Bishop, Sept. 30).

COWPEA WEEVIL (Callosobruchus maculatus) - NEW MEXICO - Adults extremely numerous on sacks of black-eyed peas in seed room of a property at Texico, Curry County. (N. M. Coop. Rpt.).

A CAMEL CRICKET (Ceuthophilus sp.) - NORTH CAROLINA - Feeding on stored potatoes in Beaufort County. (Chesnutt, Farrier).

## BENEFICIAL INSECTS

A NYMPHALID (Precis coenia) - NORTH CAROLINA - Larvae feeding on witchweed in Hoke County. (Chadwick, Farrier).

LADY BEETLES (Hippodamia spp.) - WYOMING - Adults averaged 5 per 25 sweeps in alfalfa in Laramie County. (Fullerton). OKLAHOMA - H. convergens ranged 0.2-1.0 per sweep in alfalfa. (Okla. Coop. Sur.).

NABIDS (Nabis spp.) - WYOMING - Averaged 10 adults per 25 sweeps in alfalfa in Laramie County. (Fullerton).

LACEWINGS (Chrysopa spp.) - OKLAHOMA - Ranged 0.5-1.5 per sweep in alfalfa; most common predator noted. (Okla. Coop. Sur.).

FLOWER BUGS (Orius spp.) - WYOMING - Adults averaged 6 per 25 sweeps in alfalfa and 10 per 25 sweeps in sugar beets in Laramie County. (Fullerton).

A UROPODID MITE (Fuscuropoda marginata) - MARYLAND - Immature forms on several Japanese beetles collected at Rising Sun, Cecil County. Det. by E. W. Baker. (U. Md., Ent. Dept.).

## MISCELLANEOUS INSECTS

A WHITE-FRINGED BEETLE (Graphognathus leucoloma striatus) - KENTUCKY - One specimen found on September 23 by R. B. Owens in Fulton, Fulton County, along railroad on Kentucky side of Kentucky-Tennessee border. Determination confirmed on September 29 by D. M. Weisman. Eradicative measures to be undertaken and additional delimiting surveys underway. (L. H. Townsend). This is the first record in the State. (PPC).

AN EMBIOPTERAN - OKLAHOMA - Unidentified species collected in a native grass-weed-mesquite pasture near Loveland, Tillman County. According to locally available records, this is the first time this order has been collected in the State. (Okla. Coop. Sur., Sept. 24). There are no ARS records of this order from the State. (PPC).

BLISTER BEETLES (Epicauta spp.) - ALABAMA - E. pestifera and E. pennsylvanica plentiful in Auburn area, Lee County; heaviest infestations found on goldenrod. E. pestifera plentiful at Jackson, Clarke County. (Guyton).

CIGARETTE BEETLE (Lasioderma serricorne) - MARYLAND - Adults common in kitchens of several homes in Baltimore. (U. Md., Ent. Dept.).

A CURCULIONID (Trachyphloeus bifoveolatus) - OREGON - Of concern to some homeowners in Portland area of Multnomah County. (Miller).

FALSE POTATO BEETLE (Leptinotarsa juncta) - ALABAMA - Plentiful at Jackson, Clarke County. (Guyton).

BOXELDER BUG (*Leptocoris trivittatus*) - MARYLAND - Entering homes and causing a nuisance at several localities in Washington County. (U. Md., Ent. Dept.).

COCKROACHES - VIRGINIA - *Blattella germanica* reported as difficult to control in Brodnax, Brunswick County, and Fredericksburg, Stafford County. (Beck, Rowell; Sept. 26). DELAWARE - Several new infestations of *Blatta orientalis* in homes in New Castle County. (Burbutis, Mason).

AN EARWIG (*Labidura riparia*) - CALIFORNIA - Present on a nursery property in Hemet, Riverside County. (Cal. Coop. Rpt.).

HARVESTER ANTS (*Pogonomyrmex* spp.) - NEW MEXICO - Hills very abundant in several areas in San Miguel and Lincoln Counties. Averaged over 40 hills per acre in 1 small area near Pecos, San Miguel County. (N. M. Coop. Rpt.).

AN EARTHWORM MITE (*Fuscuropoda agitans*) - CALIFORNIA - Infestations of this species and *Tyroglyphus* sp. heavy in earthworm beds in Parlier, Fresno County. (Cal. Coop. Rpt.).

## CORRECTIONS

CEIR 10(38):881 - A CERAMBYCID (Crossidius pulchrus) should read (Crossidius pulch*ellus*).

CEIR 10(41):948 - GYPSY MOTH (*Porthetria dispar*) - PENNSYLVANIA - Fourth sentence should read "It appears likely that the male *moth* found in 1959 near Harrisburg, Perry County, was transported by vehicle as an *immature form* from an area outside of the State."

CEIR 10(41):950 - SADDLEBACK CATERPILLAR (Sibene stimulea) should read (Sib*i*ne stimulea).

LIGHT TRAP COLLECTIONS

| | Pseud. unip. | Laphyg. frug. | Agrot. ips. | Perid. saucia | Prod. ornith. | Protoparce | | Helio. zea |
|---|---|---|---|---|---|---|---|---|
| | | | | | | sexta | quinq. | |
| ARIZONA | | | | | | | | |
| Mesa 9/26-10/2 | | | | | 182 | | | 37 |
| ARKANSAS | | | | | | | | |
| Hope 9/29-10/5 | 21 | | 4 | | | | | 37 |
| Morrilton 9/29-10/5 | 18 | | 8 | | | | | 76 |
| Kelso 9/29-10/5 | 23 | | | | | | | 76 |
| Fayetteville 9/29-10/5 | 16 | | | | | | | 15 |
| FLORIDA | | | | | | | | |
| Quincy 9/26 | | | 2 | | | | | 39 |
| Gainesville 9/15,20,27 | 4 | | 5 | 9 | | 4 | | 30 |
| INDIANA (Counties) | | | | | | | | |
| Lawrence 9/13-15,20-23 | 7 | | | | 4 | 11 | 17 | 27 |
| Tippecanoe 9/29-10/6 | 2 | | 1 | | | | | 4 |
| Vanderburgh 9/22-29 | 5 | | 2 | | 7 | | 1 | 136 |
| LOUISIANA | | | | | | | | |
| Baton Rouge 9/30-10/6 | 11 | 159 | 4 | | 37 | | | 25 |
| Franklin 10/3 | 7 | 7 | 5 | | 4 | | | 1 |
| MISSISSIPPI | | | | | | | | |
| *Stoneville 9/30-10/6 | 156 | 649 | 32 | 10 | 93 | 9 | | 392 |
| NEBRASKA | | | | | | | | |
| Lincoln 10/1-7 | 6 | | | 4 | | | | 44 |
| Alliance 9/22-30 | 58 | 2 | 13 | 2 | | | | 21 |
| Scotts Bluff 9/15-28 | 79 | | 52 | 22 | | | 1 | 18 |
| North Platte 9/28-10/5 | 296 | 13 | 62 | 15 | | | | 114 |
| Bushnell 9/20-29 | 45 | | 5 | 3 | | | | 4 |
| SOUTH CAROLINA | | | | | | | | |
| Clemson 10/1-7 | 36 | 115 | 3 | 4 | 30 | | | 19 |
| Charleston 9/26-10/2 | 9 | 19 | 7 | | 8 | 10 | 2 | 139 |
| TENNESSEE (Counties) | | | | | | | | |
| Monroe 9/26-10/3 | 48 | | 20 | 4 | 16 | | 4 | 116 |
| Maury 9/26-10/3 | 24 | | | | 4 | 2 | 4 | 128 |
| Robertson 9/26-10/3 | 20 | | | | 24 | | 20 | 64 |
| Cumberland 9/26-10/3 | 24 | 4 | | | 8 | 8 | 24 | 84 |
| Greene 9/26-10/3 | 18 | 16 | 20 | 8 | 32 | 6 | 8 | 120 |
| Blount 9/26-10/3 | 56 | | | | | 4 | 8 | 56 |
| Johnson 9/26-10/3 | 60 | 36 | 32 | 22 | 182 | | | 48 |
| TEXAS | | | | | | | | |
| Waco 10/1-7 | 218 | | | 77 | 51 | | | 313 |

Additional Collection

ARIZONA - (Mesa 9/26-10/2); *Spodoptera exigua* - 1,422.

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*Two traps - Stoneville

# SUMMARY OF INSECT CONDITIONS IN THE UNITED STATES [1]

## 1959

## ORNAMENTAL AND SHADE TREE INSECTS

**Ornamental Insects:** Of the lepidopterous species infesting ornamentals during the 1959 season, BAGWORM (Thyridopteryx ephemeraeformis) was the most frequently reported and the most widespread. Two infestations on juniper were reported in the Fargo area of Cass County, North Dakota. Bagworm defoliated and caused death of junipers in Kansas, while populations in Oklahoma were considerably heavier during 1959 and caused extensive damage to untreated evergreens over most of the State. The pest was also heavier than usual in Arkansas, causing severe defoliation of some ornamental plantings. Although widespread in Illinois, bagworm caused damage only in isolated areas. The pest was not as common in Indiana as in the recent past, but continued to be important in some areas of the State on evergreens and deciduous trees. The decrease in Indiana is contributed to severe winter conditions. In Ohio, the species was also less numerous during 1959 than during the past 2 years. Bagworm was moderate to heavy on arborvitae in Georgia and heavily infested cedar trees in Franklin and West Carroll Parishes, Louisiana, during July. The pest was of importance on ornamental evergreens over Virginia during 1959 and somewhat below normal on the same hosts in Maryland. The species was generally abundant in New Jersey during 1959, causing injury mainly to arborvitae.

Two other psychids were also reported as infesting ornamentals. Oiketicus townsendi heavily infested arborvitae in several areas of Chaves County, New Mexico, during September. In Utah, Apterona crenulella again infested outsides of a few homes in northern areas, as well as attacking foliage of ornamentals and fruit trees about homes. Damage to range plants by this psychid in Cache, Box Elder, Rich, Summit and Weber Counties was below average during 1959.

AZALEA LEAF MINER (Gracilaria azaleella) and LILAC LEAF MINER (G. syringella) were heavy locally in Washington County, Rhode Island, in mid-July and early August, while severe infestations of SOLITARY OAK LEAF MINER (Cameraria hamadryadella)caused much concern for oaks in ornamental situations over the State during 1959. Lilac leaf miner was very abundant in Montana, east of the mountains, during 1959.

STRIPED GARDEN CATERPILLAR (Polia legitima) was reported as a new State record for Florida during 1959. Larvae were collected on goldenshower senna (Cassia fistula) November 6, 1955, at Gainesville, Alachua County. Determination was made by H. W. Capps. Infestations of IRIS BORER (Macronoctua onusta) in iris were numerous in central and southern sections of Maryland during 1959. Larvae of a NOCTUID (Arzama sp.) were collected from calladium bulbs in storage in Florida; about 2 acres were reported infested upon digging of bulbs at Lake Placid, Highlands County, on January 8. Adults of another noctuid, Melipotis acontioides, were collected at lights on Key Largo, Monroe County, on January 30 and all females were found to be gravid. Larvae of this noctuid were reported defoliating royal poinciana (Delonix regia) at Key West on January 29, which was the first report of damage for 1959. This species was not reported to be as serious in 1959 as it was in 1958. In North Carolina, an unusual infestation of Xanthopastis timais, another noctuid, fed on flowers in early June in Columbus County.

Larvae of PAINTED-LADY (Vanessa cardui) fed on caragana hedge in Judith Basin County, Montana, during 1959, while MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) caused approximately 2 percent defoliation of bitterbrush (Purshia tridentata) in the Pine Creek-Keithley Creek drainage of Washington County, Idaho, during late May and early June. Two other NYMPHALIDS were reported as damaging during 1959. In Kansas, larvae of Asterocampa celtis were present in large numbers on hackberry in the western part of the State and in moderate numbers in the eastern portion. *Agraulis vanillae* defoliated passionvines in Marin and Santa Clara Counties, California.

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[1] Including all reporting states except Hawaii and Alaska, which were carried in CEIR 10(4):46 and CEIR 10(6):74, respectively.

LEAF CRUMPLER (*Acrobasis indiginella*) webbed 30 percent of the pyracantha plantings in Dare County, North Carolina, and was also reported from nearby Camden County. Another PHYCITID (*Euzophera* sp., *ostricolorella* or near) cut the cambium and killed magnolia trees less than 4 inches in diameter in Mecklenburg County of the same State, but adults could not be reared for definite determination.

UGLY-NEST CATERPILLAR (*Archips cerasivoranus*) fed on caragana in north central and on ornamentals in western Montana, while a BOXELDER LEAF ROLLER (*A. negundanus*) caused light local damage in Utah. Larvae of OMNIVOROUS LEAF ROLLER (*Platynota stultana*) were reported as serious on carnations in the Bradenton area of Manatee County, Florida, on April 15, and another LEAF ROLLER (*Platynota* sp.) caused some damage to azaleas in nurseries in St. Tammany Parish, Louisiana.

Several other lepidopterous species were reported from various sections of the Nation as either infesting or damaging a variety of ornamentals. DOGWOOD BORER (*Thamnosphecia scitula*) was found infesting several dogwoods during the 1959 season in New Castle County, Delaware, with larvae apparently mature by the third week in July. The species was widely spread on ornamentals in New Jersey, but no more serious than in previous years. CHAIN-SPOTTED GEOMETER (*Cingilia catenaria*) larvae were again abundant during 1959 on a variety of brush and tree species on Conanicut Island and at Matunuck on the Rhode Island mainland. They caused concern invading home plantings, where they fed on practically all plants. There was a general buildup of ARBORVITAE LEAF MINER (*Argyresthia thuiella*) in Vermont during 1959.

EASTERN TENT CATERPILLAR (*Malacosoma americanum*), after exhausting available food supply in Richmond County, North Carolina, especially in the city of Rockingham, migrated to ornamentals. In South Carolina, STINGING ROSE CATERPILLAR (*Parasa indetermina*) was collected from dogwood at Pendleton, Anderson County, on August 28 for a new State record. Determination was made by H. W. Capps. The first record of EUROPEAN PINE SHOOT MOTH (*Rhyacionia buoliana*) for the Pacific coast states was recorded from Washington on ornamental red pine at Bellevue, King County, and was later found at Sumner, Pierce County.

An AMATID MOTH (*Lymire edwardsi*) damaged *Ficus* sp. in the southern portion of Florida during January and was especially heavy on strangler fig (*F. aurea*), with many trees being defoliated. It also attacked *Ficus* sp. during March. A WEBWORM (*Tetralopha militella*) was reared from American planetree in the Gainesville area of Alachua County during May for a new Florida record. The species was determined by C. P. Kimball. This species was also very injurious to foliage of London planetree in one area of Sussex County, Delaware, during July. A PYRAUSTID (*Asciodes gordialis*) became active in southern Florida in April and caused severe damage to bougainvillea in some areas. Also in Florida, an OLEANDER CATERPILLAR (*Syntomeida epilais jucundissima*) was abundant and completely defoliated plants wherever oleander was found. Little control was done for this pest which is generally distributed throughout the summer. A SEAGRAPE BORER (*Hexeris enhydris*) was quite active in coastal areas of Florida, especially in Dade County during April, with most damage being noted in nurseries near Everglades, Collier County. A large infestation of this borer (2,000 per 2,500 plants) was found on Merritt Island, Brevard County, on June 12.

Several species of Coleoptera were reported during the 1959 season as infesting and/or damaging to ornamentals. The most frequently reported of these was JAPANESE BEETLE (*Popillia japonica*). In Rhode Island, adults of this scarabaeid were first observed on July 1. A heavy emergence from a new lawn occurred in Warwick, Kent County, and there were localized emergences in North and South Kingstown, Washington County. The species was of moderate importance in the State during 1959. Infestations of Japanese beetle were heavier in New Jersey during

1959 than they have been for the past several years. Adults were first noted in Delaware on June 8 in New Castle County. Large numbers and heavy feeding injury occurred during June and early July on wild cherry, peach, mimosa and roses. In Maryland, Japanese beetle adults caused somewhat less concern during 1959 than during 1958 in all sections on ornamentals. The pest was a problem on various ornamentals during 1959 in infested areas of Virginia. Additional infestations were found in one area each in Wise and Floyd Counties. Japanese beetle was of general importance in North Carolina during emergence, which occurred during late May in southeastern counties and during late June in western counties. In Georgia, the pest was reported from Richmond County.

The adult population of Japanese beetle in Ohio was much lower than in 1958; however, the fall grub population was greater than that of 1958. Although many new locations of Japanese beetle infestation were found in Indiana during 1959, populations in established areas were lower than for several years. In Newton County, adults were sparse on smartweeds in the area where they have been abundant in past years. High temperatures during July and August and lack of soil moisture possibly reduced activity, especially egg laying. By October 1, most larvae were still in the first and second instar. New locations of infestation included Seymour, Montezuma and Crawfordsville. In Wisconsin, 1,000 bait traps were set out in 9 different counties at possible sites of entry, but no Japanese beetles were taken in these traps during 1959.

A CUBAN MAY BEETLE (Phyllophaga bruneri) was discovered during June at Miami, Florida,for a new United States record. This species was previously known only from Cuba, where it was described. See CEIR 10(4):47-49, for additional information on this species. Grubs of NORTHERN MASKED CHAFER (Cyclocephala borealis) caused heavy injury to lawns in some Maryland suburban areas. Heavy flights of ASIATIC GARDEN BEETLE (Autoserica castanea) to lights appeared in Washington County, Rhode Island, in Kingston and Narragansett on July 13. Adults of ROSE CHAFER (Macrodactylus subspinosus) were moderate in the State during 1959, first being observed on roses June 4.

There was a heavy emergence of BLACK VINE WEEVIL (Brachyrhinus sulcatus) in a nursery in Washington County, Rhode Island, on June 24, while injury from this pest was present in localized areas of New Jersey during 1959. A JAPANESE WEEVIL (Pseudocneorhinus bifasciatus) occasionally injured foliage of azaleas and other ornamentals in Montgomery, Prince Georges and Wicomico Counties, Maryland. ROSE CURCULIO (Rhynchites bicolor) was damaging to roses in Utah during the 1959 season.

Populations of a WILLOW FLEA BEETLE (Altica sp.) appeared to be at about normal levels throughout the northern part of Idaho during the summer of 1959. Oviposition of a WILLOW LEAF BEETLE (Chrysomela sp., probably scripta complex) in Idaho was noted on June 5 near Porthill in Boundary County, with fairly large numbers of adults noted on marshland willows in that area during late June. SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) became exceedingly abundant and destructive in Indiana late in the season, causing injury to many varieties of flowers. PINE COLASPIS (Colaspis pini) caused severe damage to spruce and loblolly pine used as ornamentals in East Baton Rouge and Livingston Parishes, Louisiana. In Florida, BANDED CUCUMBER BEETLE (Diabrotica balteata) damaged hibiscus flowers in nurseries during April in Miami, Dade County; while another CHRYSOMELID, Maecolaspis favosa, was reported throughout the State during 1959 as damaging crapemyrtle, cuphea, ixora, waxmyrtle and punk-tree foliage and was of economic propotions on ixora in several areas. Adults of ROSE LEAF BEETLE (Nodonota puncticollis) were very abundant on roses in New Castle County, Delaware, during 1959, causing rather heavy feeding injury in some sections. Grubs, probably ROUNDHEADED APPLE TREE BORER (Saperda candida) were rather common during May, with serious injury on ornamental hawthorn in Kennebec County, Maine. Another CHRYSOMELID, Mantura chrysanthemi, was found on sorrel in the Monmouth area of the same county, for a first record of this species in Maine.

BRONZE BIRCH BORER (*Agrilus anxius*) continued to be the most serious pest of birch trees in home plantings in Minnesota. A BOSTRICHID (*Sinoxylon conigerum*) was collected boring in sapodilla (*Achras sapota*) in Florida at Miami, Dade County, on August 10, 1959, and determined by T. J. Spilman. The pest has been intercepted many times at ports of entry, but this report appears to be the first record of the establishment of the species in the United States. Specimens of a SEED BEETLE (*Caryoborus serripes*) were found December 3, 1958, at Miami and were subsequently determined by P. J. Spangler as this species. This is a South American species known from Brazil, French Guiana, Bolivia and Venezuela, where it is found in seeds of palms of the genera *Astrocaryum* and *Maximilianea*. Although *C. serripes* has been intercepted a number of times at ports of entry, it is not known to be established in the United States. The Miami specimens were taken from 2 types of palm seeds which had been imported for oil extraction. Although these seeds had been fumigated with methyl bromide, live adults were collected at a later date. All seeds remaining were destroyed by burning.

A JUNIPER BARK BEETLE (*Phloeosinus dentatus*) occurred in a majority of *Juniperus virginiana* growing on an estate in Rhode Island. The concentration of the beetles developed from trees that had been killed the previous season and after cutting, had been stacked on the premises. The newly attacked trees were fading by mid-May. In South Dakota, this juniper bark beetle damaged ornamental junipers in Stanley and Haakon Counties. A NITIDULID (*Conotelus mexicanus*) damaged flowers and was a nuisance in gardens in many areas of New Mexico. Another NITIDULID, *Meligethes nigrescens*, reached heavier numbers than have been found for the past 4 years in the Willamette Valley of Oregon on many ornamental flowers. Several species of RANGE INSECTS, especially Coleoptera, affected shrubs in Nevada and were above normal in numbers and caused extensive damage.

Several species of APHIDS were reported from various States as infesting ornamentals during 1959. Among these was *Mastopoda pteridis*, which was collected on bracken fern (*Pteridium aquilinum*) at Ft. Pierce, St. Lucie County, Florida, on October 21, 1958, and reported as first record for that State during 1959. COOLEY SPRUCE GALL APHID (*Chermes cooleyi*) caused moderate damage to ornamental spruce in Kennebec County, Maine, during May, and was unusually abundant in a Washington County nursery, Rhode Island, and locally elsewhere in the State. PINE BARK APHID (*Pineus strobi*) became a problem in several nurseries in the northern part of Minnesota; chemical treatments were required.

An ARBORVITAE APHID (*Cinara tujafilina*) was reported as infesting arborvitae in several states. The aphid was common on stems of arborvitae during March and again in October in northern Kent County, Delaware; however, no alate forms were found. In Florida, large populations were present on *Thuja* sp. during January at Tampa and Plant City, Hillsborough County. Infestations of *C. tujafilina* were heavy on arborvitae during the early summer in most of New Mexico, while some severe infestations were reported on arborvitae shrubs in the Caldwell area of Canyon County, Idaho, during early July.

BOXELDER APHID (*Periphyllus negundinis*) heavily infested boxelder trees at Carlsbad, Eddy County, and at Tucumcari, Quay County, during May and June; while in Utah, it was often very abundant, causing trees to be very sticky. Infestations of boxelder aphid were unusually severe in Nevada during 1959; leaves were stunted and yellow, and large amounts of honeydew covered the ground beneath the trees. GREEN PEACH APHID (*Myzus persicae*) also occurred in above normal numbers in Nevada on ornamental *Prunus*. Also in Nevada, various unspecified species of aphids were numerous and common pests in home flower gardens during 1959. Species occurring in above normal numbers on various ornamentals included *Cinara* sp. on juniper, *Myzocallis robiniae* on locust trees; and *Periphyllus populicola*, *Pemphigus* spp. and *Thecabius* spp. on poplars.

CHRYSANTHEMUM APHID (*Macrosiphoniella sanborni*) was found in large numbers on chrysanthemums in only one area of Kent County, Delaware, during 1959, while CRAPEMYRTLE APHID (*Myzocallis kahawaluokalani*) was unusually abundant on crapemyrtle in central Piedmont counties of North Carolina during the 1959 season. In Wyoming, PEA APHID (*Macrosiphum pisi*) was very abundant on many shrubs during August. An OLEANDER APHID (*Aphis nerii*) was very heavy on oleander in Arizona during April and May, and several different species were heavy on ornamentals and commercial rose plantings in central and southeastern portions of the State during the spring months. Infestations of POTATO APHID (*Macrosiphum euphorbiae*), ROSE APHID (*M. rosae*) and *Amphorophora nervata* were heavy on roses in the spring in New Mexico. TULIP BULB APHID (*Anuraphis tulipae*) infestations were heavy on iris plants during early summer in Dona Ana, Luna, Lea and Eddy Counties of the same State. Severe infestations of ROSE APHID were reported on roses in Latah County, Idaho, during early June and in Aberdeen, Bingham County, and in Twin Falls, Twin Falls County, during July. Several aphid species were injurious to ornamentals over Utah, particularly during the spring; while in Maryland, various species gave considerable trouble on rose, flowering quince, chrysanthemum, pyracantha, tulip-poplar, oak and pine.

Two new species of WHITEFLIES were collected in Florida during 1959; *Dialeurodes* n. sp. on holly (*Ilex opaca*) at Lake Mary, Lake County, February 6, and *Tetraleurodes* n. sp. on fiddlewood (*Citharexylum fruticosum*) in the Everglades National Park, Dade County, during April. Specimens of a whitefly (*Odontaleyrodes rhododendri*) collected on azalea (*Rhododenron* sp.) at Leesburg, Lake County, on January 20, 1959, constitute a new Florida record for this species; while specimens of another whitefly, *Aleyrodes spiraeoides*, collected on *Iris* sp. at Tallahassee, Leon County, on April 10, not only constitute a new record for Florida, but also the first record of this species in eastern United States.

A heavy infestation of BOXELDER PSYLLID (*Psylla negundinis*) on boxelder was reported at Williston, Williams County, North Dakota, and numbers of this pest were moderate in Utah. BOXWOOD PSYLLID (*P. buxi*) occurred in noticeable numbers during 1959 in the Salem area of Oregon the week of April 26. In California, another PSYLLID (*P. uncatoides*) was a nuisance and damaged acacia trees in San Diego County and was also a nuisance to humans around infested trees. In Kansas, HACKBERRY NIPPLE GALL (*Pachypsylla celtidis-mamma*) and a HACKBERRY BLISTER GALL (*P. celtidis-vesicula*) caused moderate to severe defoliation in midsummer. Hackberry nipple gall was also a minor problem in Minnesota, wherever hackberry trees are grown.

MEADOW SPITTLEBUG (*Philaenus leucophthalmus*) was present in heavier numbers than previously noted on shrubs and ornamentals in the north coast counties of California during 1959. Another SPITTLEBUG (*Clastoptera arizonana*) severely damaged acacia trees in San Diego, Orange, Los Angeles, Riverside and San Bernardino Counties, and is spreading rather rapidly in the State. In New Mexico, adults and nymphs of *Clastoptera* sp. were very abundant on chokecherry trees near Taos, Taos County. Two SPITTLEBUGS (*C. proteus nigricollis* and *C. obtusa*) were abundant on dogwood and ironwood trees in the Lafayette area of Tippecanoe County, Indiana, in early June. Adults of still another SPITTLEBUG (*Tomaspis bicincta*) were fairly abundant on holly trees in New Castle County, Delaware, during the last week of July.

A THORNBUG (*Umbonia crassicornis*) was on the increase in Palm Beach County, Florida, on *Acacia* sp., *Calliandra* sp. and *Pithecellobium* sp. in January and continued abundant through April. ROSE LEAFHOPPER (*Edwardsiana rosae*) very conspicuously discolored foliage of cultivated roses throughout Utah during 1959, and wild roses were equally injured. This leafhopper also became numerous on spirea at Logan, Cache County, in the fall. Also in Utah, VIRGINIA-CREEPER LEAFHOPPER (*Erythroneura ziczac*), *E. elegans* and other species again damaged Virginia creeper foliage during late summer and fall in many communities. Leaves were frequently killed before late August. Virginia-creeper leafhopper was also common on Virginia creeper in the eastern portion of Montana during 1959. Nymphs of an unspecified species of a FLATID PLANTHOPPER were abundant on shrubbery in the Coastal Plain of North Carolina.

COCCIDS were also of some concern during the 1959 season. In Maryland, COTTONY MAPLE SCALE (*Pulvinaria innumerabilis*) was of concern on dogwood and maple. FLETCHER SCALE (*Lecanium fletcheri*) was observed hatching in nurseries in the Barrington area of Bristol County and in Washington County, Rhode Island, about the first week of July. This scale was unusually abundant on yews, junipers and arborvitae throughout Indiana and was common on yews in most nurseries in Wisconsin. In Minnesota, the infestation level of Fletcher scale maintained a level similar to that of 1958. EUROPEAN FRUIT LECANIUM (*Lecanium corni*) remained a serious problem over most of Minnesota, especially in the Twin City area in Edina, Hopkins and St. Louis Park, and also damaged roses in Utah at Vernal, Uintah County. An outbreak of *L. corni* complex occurred on ornamentals in Whatcom County, Washington, during the spring of 1959.

In Louisiana, FLORIDA WAX SCALE (*Ceroplastes floridensis*) severely infested ornamentals in the New Orleans area. A MEALYBUG (*Geococcus coffeae*) was found in all stages on April 20 on ovalleaf peperomia (*Peperomia obtusifolia*) at Oviedo, Seminole County, Florida; a new county record and the second report of this species in Florida, being first reported from Apopka, Orange County, in 1958. The species has also been found on *Schefflera* sp., artillery fern (*Pilea* sp.) and neanthe palm. BROWN SOFT SCALE (*Coccus hesperidum*) damaged philodendron and BLACK SCALE (*Saissetia oleae*) was heavy on fiddleleaf fig at Alameda, Bernalillo County, New Mexico, while moderately heavy infestations of CITRUS MEALYBUG (*Pseudococcus citri*) damaged oleander at Albuquerque in the same county. *Saissetia nigra* damaged rubber plants in greenhouses in Roswell and Albuquerque. In Ohio, GRAPE MEALYBUG (*Pseudococcus maritimus*) ranked third in number of times pests were reported by nursery inspectors.

In Maryland, *Leucaspis japonica* caused concern on privet and holly, as did *Ceroplastes* sp. on hemlock and other hosts. Several coccid species were reported on ornamental plants over Virginia during the 1959 season. Other COCCIDS (*Lecanium* spp.) were more abundant than usual in Ohio. Reports of *Aspidiotus spinosus* from *Ilex* sp. in Tulsa County, *Chrysomphalus albopictus* from magnolia leaves in Oklahoma County and *Pulvinaria acericola* from persimmon in McCurtain County were all first records for Oklahoma during 1959.

EUROPEAN FRUIT SCALE (*Aspidiotus ostreaeformis*) was found infesting silktassel (*Garrya* sp.) in Ventura County, California, for a new State record as well as a new host record. SAN JOSE SCALE (*A. perniciosus*) was of concern on pyracantha in Maryland during the 1959 season, and was reported for the first time from the Twin Cities area of Minnesota. SCURFY SCALE (*Chionaspis furfura*) was a continuing problem and serious over most of Minnesota, especially in Edina, Hopkins and St. Louis Park in the Twin City area. As in the past, a CEDAR SCALE (*Cryptaspidiotus shastae*) has become a lesser problem in Kansas now that the effects of the 1952-1956 drought are no longer a factor on insect problems. JUNIPER SCALE (*Diaspis carueli*) was more active than usual during 1959 in the southern Piedmont area of North Carolina and damaged ornamental junipers in several Utah localities.

OYSTERSHELL SCALE (*Lepidosaphes ulmi*) was severe on lilac in many areas of Rhode Island, crawlers being first observed the first week of June. Oystershell scale also caused damage to various species of shrubs and trees over Wyoming during 1959. PINE NEEDLE SCALE (*Phenacaspis pinifoliae*) was common on ornamental mugho pine and Australian-pine in Chittenden County, Vermont, during 1959, and the infestation was again general throughout Minnesota in some home plantings of spruces and pines. Pine needle scale was common on ornamental spruce in the southern half of Montana and damaged ornamental trees and shrubs throughout Wyoming during the 1959 season. WHITE PEACH SCALE (*Pseudaulacaspis pentagona*) occurred on many hosts over North Carolina during the year. EUONYMUS SCALE (*Unaspis euonymi*) was very abundant in New Jersey with 2 generations of crawlers present and caused concern in Maryland by infesting euonymus and bittersweet. Heavy populations of this scale damaged euonymus plants in many areas of New Mexico during the season. AZALEA BARK SCALE (*Eriococcus azaleae*) heavily infested at least one rhododendron planting in Portland, Multnomah County, and several reports indicate that this pest many be on the increase in Oregon.

Nymphs of a ROYAL PALM BUG (Xylastodoris luteolus) were found on royal palms (Roystonea sp.) at Ft. Lauderdale, Florida. The first report of the 1959 season was made in June, when approximately 25 percent of the royal palms in this area were infested. Adults of BOXELDER BUG (Leptocoris trivittatus) were very numerous during July on roses in New Castle County, Delaware, and all stages were abundant during August and September on boxelders in Kent County. HACKBERRY LACE BUG (Corythucha celtidis) caused severe bleaching and considerable defoliation of hackberry during 1959 in Kansas; while unspecified species of LACE BUGS were a problem throughout the season in Maryland on azalea, hawthorn, rhododendron, oaks, pyracantha and sycamore.

CUBAN-LAUREL THRIPS (Gynaikothrips ficorum) was found infesting Ficus retusa on an El Cajon property in San Diego County, California. Subsequent inspections revealed light to heavy infestations of this species of Ficus in the city of San Diego and nearby towns, as well as in Tijuana, Mexico. This is the first record of this thrips in California. In Oregon, GLADIOLUS THRIPS (Taeniothrips simplex) infested about one-half acre of gladiolus near Silverton, Marion County; this is the heaviest infestation observed in 3 years. Gladiolus thrips caused normal damage to ornamental flowers in Utah during 1959, while another THRIPS, Frankliniella occidentalis, was again very abundant in cultivated and wild flower blossoms. Unspecified species also damaged roses in that State. Unspecified THRIPS were reported distorting terminal growth of lilac in a location in the Twin City area of Minnesota, which was the first known record in recent years of thrips causing injury to lilac.

An EARWIG (Pyragropsis buscki) was found May 11 on washingtonia palm (Washingtonia robusta) at Coral Gables, Dade County, Florida. All previous records are from coconut palms and the species is known from Cuba and Jamaica. It had been collected in Florida only twice before. Seventeen additional specimens were collected on coconut palm under old petiole bases where the brown fibers overlap. Collections were made at Crandon Park, Key Biscayne, Dade County, on October 27, 1959.

HOLLY LEAF MINER (Phytomyza ilicis) remains confined to those areas of Oregon where it was found during 1958, namely Portland-Gresham and Astoria. A HOLLY LEAF MINER (Phytomyza sp.) required controls in all areas of Rhode Island during 1959. NATIVE HOLLY LEAF MINER (P. ilicicola) was apparently scarce in Delaware during the 1959 season and relatively few serpentine-like mines, typical of this species, were noted on the 1959 new growth during July. A new species of HOLLY LEAF MINER (near P. ilicicola) was very abundant in sections of Sussex County, Delaware, and has also been found in other areas of the State. The blotch-like mines made by this new species are most noticeable during late March and April when larvae are completing development. By April 24 pupation was completed and most adults had emerged. Similar type mines, but smaller and containing younger larvae, were again present in November. Adults from these blotch mines emerge from the upper surface of the holly leaves; this habit is similar to P. ilicis.

First adults of NARCISSUS BULB FLY (Lampetia equestris) were observed in Washington on May 5 at Sumner, Pierce County. Adults were numerous on San Juan and Orcas Islands but not on Lopez Island, San Juan County. In Marin County, California, a TEPHRITID (Eutreta pacifica) caused heavy gall formation on second-year chrysanthemums, while in Sedgwick County, Kansas, a GALL MIDGE (Phytophaga celtiphyllia) produced many galls on the leaves and young twigs of hackberry in Wichita.

A SAWFLY (Profenusa canadensis) was locally heavy on hawthorn in North Kingstown, Washington County, and North Providence, Providence County, Rhode Island, in late May. Occurrence of BIRCH LEAF MINER (Fenusa pusilla) was general in Maine during

May, infestations and damage being moderate from the ornamental standpoint. Birch leaf miner was generally heavy on birch in nurseries throughout Wisconsin, but in natural stands infestation was not great. ROSE-SLUG (Endelomyia aethiops) damaged roses in Utah and had skeletonized the same host in the northern Piedmont of North Carolina by mid-May. Also in North Carolina, a CARPENTER BEE (Ceratina sp.) destroyed most of an 80-acre planting of roses in Mecklenburg County.

SPRUCE SPIDER MITE (Oligonychus ununguis) infested ornamental spruce at St. Patrick's Hospital in Missoula, Montana, during the 1959 season. Spruce spider mite and TWO-SPOTTED SPIDER MITE (Tetranychus telarius) continued to be the two most troublesome pests in nurseries in Ohio during 1959. Two-spotted spider mite became abundant on many flowering plants in Indiana during late summer, was severe on many evergreen plantings in Minnesota during the same period and damaged roses in Utah during the season. Unspecified species of SPIDER MITES were unusually heavy in Nevada on ornamental evergreens, such as juniper and spruce, and required more controls than usual; and heavy infestations were present on juniper, perennials and shrubs in many sections of North Dakota. Tetranychus spp. continued to develop and resulted in sporadic outbreaks in Nebraska; but, less than usual numbers were observed during 1959. A SPIDER MITE (Eotetranychus clitus) caused some damage to azaleas in nurseries in St. Tammany Parish, Louisiana, while several species of this group of mites were of primary importance on ornamentals during the 1959 season in Virginia. Unspecified species of spider mites were generally above normal on boxwood, spruce and other ornamentals in all sections of Maryland due to hot and dry weather in July, while various species were abundant into the fall of the year in New Jersey.

Heavy infestations of PRIVET MITE (Brevipalpus obovatus) occurred on privet and associated shrubs in Santa Clara County, California. In Oregon, a FALSE SPIDER MITE (Pentamerismus erythreus) severely damaged some arborvitae in the Grass Valley area of Sherman County. A new species of ERIOPHYID MITE (Eriophyes n. sp.) was observed damaging ornamental Exochorda sp. in the Portland area of the same State, but not extensively. Specimens of Eriophyes sp. collected on laurelcherry (Prunus caroliniana) in Alachua County, Florida, on August 25, may be a new species. Various species of MITES were numerous and common in home flower gardens in Nevada during the 1959 season.

Shade Tree Insects: Several lepidopterous species were reported as infesting and damaging various shade trees during the 1959 season. Infestations and damage were variable, depending upon the species involved and geographic location. Specimens of a NOCTUID (Ufeus sagittarius), collected under the bark of poplar in the Riverton area of Fremont County, Wyoming, constituted a new record for that State. Determination was made by H. W. Capps. Another new State record was the reporting of MIMOSA WEBWORM (Homadaula albizziae) from Webster Parish, Louisiana. This pest of honeylocust and mimosa was also reported from Duval County, Florida; Lake County, Indiana; and Madison County, Illinois, as new county records during 1959.

As in previous years, FALL WEBWORM (Hyphantria cunea) continued to be extremely abundant on wild cherry trees in most areas of the Clearwater River drainage in Idaho during September; and the pest reached epidemic proportions on shade trees throughout most of New Mexico, causing complete defoliation in many areas of Dona Ana, Eddy, Lea and Chaves Counties, as well as the Carlsbad Caverns National Park and Bandelier, Chaco Canyon and Aztec Ruins National Monuments. Infestations in Oklahoma were light to medium on a wide variety of trees throughout the State. Fall webworm was more widespread and considerably more abundant during 1959 in Illinois than for several years, while infestations on pecan and hickory in Georgia were lighter than in most years. Fall webworm was first encountered in Delaware as early as June 12 on linden in Kent County. Heaviest infestations in that State occurred on wild cherry, chokecherry, crabapple, black walnut and oak in southeast Sussex County from July through September. A moderate infestation in Maine during

July caused medium damage to roadside trees in the Gorham area of Cumberland County; but, during August, infestations and damage were generally light on shade trees throughout the State.

MIMOSA WEBWORM (*Homadaula albizziae*) was reported for the first time from Louisiana, heavily infesting mimosa in Webster Parish. The species was collected in Florida at Pensacola, Escambia County, on July 8, and for the first time in Duval County at Jacksonville on May 1. As yet, this pest has not been reported from the peninsular portion of the State. In Georgia, the pest was heavy throughout the State. Mimosa webworm was collected from honeylocust trees in Madison County, Illinois, for a new 1959 county record, and continued to spread throughout Indiana on the same host, being reported for the first time in Lake County, a point marking its farthest northward penetration in that State. Most honeylocust in southern Indiana were completely defoliated during August and September. Across the State line in Ohio, this species has become a pest of thornless honeylocust in the southwestern portion of that State. Mimosa webworm was of importance on mimosa and honeylocust trees over Virginia during 1959 and was heavy on these same hosts in most sections of Maryland. Infestations were particularly severe in Delaware during 1959, especially in Kent County and sections of New Castle County where no control measures were taken. Initial attacks occurred around mid-June in Delaware and the heaviest injury from more mature larvae was notable during the second week of July and again during the first week of September. In New Jersey, mimosa webworm caused heavy damage to honeylocust and Moraine locust in southern and central areas of the State, with infestations ranging northward through Middlesex County.

Two other WEBWORMS, *Salebria afflictella* and *Tetralopha melanogrammos*, were rather common during 1959 on sweetgum trees in Sussex and New Castle Counties, Delaware. However, they were not as injurious as in 1958 when they were reported as causing conspicuous injury to this host in Sussex County. In Wisconsin, populations of still another webworm, *Tetralopha asperatella*, were very low in the maple blight area of Florence and Forest Counties.

Migrations of EASTERN TENT CATERPILLAR (*Malacosoma americanum*) caused considerable consternation in the western portion of Pennsylvania, where attempts were made to get legislation in effect for control. Infestations in Delaware were more severe than during 1958. By mid-April, most eggs had hatched, and by the first week of May, tents were extensive and noticeable throughout the State on wild cherry, crabapple and chokecherry. The pest was again abundant on wild and neglected fruit trees in all sections of Maryland. Eastern tent caterpillar infestations were heavy on wild cherry in Georgia, defoliating many trees. This pest was common throughout Illinois, with 30 nests being observed in one wild cherry tree and 15-20 nests being common in some areas of the south central section. In the northern portion of the State, 1-6 nests were common.

TENT CATERPILLARS (*Malacosoma* spp.) built up considerably on forest trees and ornamentals in California during 1959, being severe in some locations when drought conditions occurred. Neglected fruit trees were severely damaged in a few northern locations. In Louisiana, tent caterpillars were not as numerous during 1959 as in 1958.

BAGWORM (*Thyridopteryx ephemeraeformis*) was very active during 1959 throughout Delaware on a wide variety of hosts. Heavy infestations occurred on isolated trees of sycamore, elm, willow, wild cherry, maple, arborvitae and white oak. Attacks were also noted on redcedar, mimosa and white pine.

SPRING CANKERWORM (*Paleacrita vernata*) was present on elms in Sussex County, Delaware, during May, but never reached the serious proportions attained during the 1958 season. Heavy infestations occurred in localized eastern and central areas of Nebraska during April, with moderate to severe defoliation of host trees. In South Dakota, infestations were reported on elms from Clay, Minnehaha and Lawrence Counties during 1959. Unspecified CANKERWORMS defoliated elm, hackberry and locust throughout eastern Kansas in April. Many communities in that State were unable to carry out planned controls because of unfavorable weather.

The infestation of WALNUT CATERPILLAR (*Datana integerrima*) on native walnut trees in the Carlsbad Caverns National Park, *New Mexico*, declined noticeably during 1959; however, moderately heavy infestations were found near Hondo, Lincoln County. The pest was present throughout the northern three-fourths of Illinois during 1959 and completely defoliated black walnut trees in the northern half of the State. Infestations of YELLOW-NECKED CATERPILLAR (*D. ministra*) in Delaware, occurred in New Castle County during August; but, the heavy, widespread infestation, such as those that occurred in 1957 and 1958, did not appear during the 1959 season. Although present throughout the northern half of Illinois during 1959, the species was probably not as abundant as during the past 2 years. Yellow-necked caterpillar damaged shade trees and shelter belts in the southeast area of South Dakota.

Larvae of BASSWOOD LEAF ROLLER (*Pantographa limata*) were moderate on linden in Kingston, Delaware, during August; and LOCUST LEAF ROLLER (*Nephopteryx subcaesiella*), or one closely related, was common on honeylocust near Dixon, Lee County, Illinois, early in the same month. Populations of another LEAF ROLLER, *Acleris chalybeana*, were very low on maple in northeastern Wisconsin.

SATIN MOTH (*Stilpnotia salicis*) caused 98 percent defoliation of a few willow and poplar trees at one location in Bangor, Penobscot County, Maine, in July. Larvae of WHITE-MARKED TUSSOCK MOTH (*Hemerocampa leucostigma*) were common to fairly abundant on elms and sycamores during June in Delaware, but infestations were generally lighter during 1959 than they were during 1958. Also in Delaware, CATALPA SPHINX (*Ceratomia catalpae*) caused complete defoliation of many catalpa trees in Kent and Sussex Counties during late September and early October. However, infestations in general did not encompass as wide a range as during 1958. In Illinois, catalpa sphinx defoliated many catalpas in the southern half of the State.

MOURNING-CLOAK BUTTERFLY (*Nymphalis antiopa*) damaged elm and willow trees in San Mateo and Santa Clara Counties, California, and attracted the usual amount of attention in other northern locations in the State. Larvae of PAINTED-LADY (*Vanessa cardui*) defoliated elms in the Albuquerque area of Bernalillo County, New Mexico, during October. In Arizona, heavy infestations of a SHIELD BEARER (*Coptodisca* sp.) occurred on poplars in Yuma County during June and in the central area of the State during July. As many as 24 larvae could be found in a single leaf. Damage to foliage was heavy.

Various species of Coleoptera were reported as damaging to shade trees during the 1959 season, the degree and extent of damage varying with location, pest and host involved. SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*) was reported for the first time in South Dakota, being found on a window sill in a home in Minnehaha County during the first week of May. It was found in 3 areas of the State during 1959 and caused considerable damage. However, no Dutch elm disease was reported from this State during the year. This pest also slowly extended its range and damage in California during 1959, with complete kill of many elms occurring over the State. This common vector of Dutch elm disease in Indiana was noted continuously from May 20 to September 23, indicating an overlapping of generations. It was also very abundant in the Champaign-Urbana area of Illinois. Smaller European elm bark beetle, the principal vector of Dutch elm disease in Wisconsin, began emerging May 12 in Milwaukee County. Infestations of this beetle were reported for the first time in Vernon, Monroe, Juneau, Dunn, Outagamie, Brown and Manitowoc Counties during 1959. Incidence of Dutch elm disease reached 3,580 cases during 1959, compared with 1,882 during 1958. The disease was found for the first time in Columbia, Dodge, Fond du lac, Lafayette and Winnebago Counties during the 1959 season. Smaller European elm bark beetle also continued to spread Dutch elm disease in New Jersey, as did NATIVE ELM BARK BEETLE (Hylurgopinus rufipes).

Several species of leaf beetles infested elms and other shade trees in various states, causing moderate to severe damage. Most prominent among these was ELM LEAF BEETLE (Galerucella xanthomelaena), which was more prevalent in California than in previous years and required considerable control. In Los Angeles County, a TACHINID (Erynnia nitida), parasitic on this beetle, apparently exerted good control in the Castaic area. In Nevada, elm leaf beetle adults were active the first part of May and egg laying began in mid-May. Both first and second-brood larvae caused serious damage, with untreated trees being almost 100 percent damaged, as were those inadequately treated. In most areas, poor treatment increased total damage. To the east, in Utah, elm leaf beetle was much less destructive to elm foliage than during the 1958 season in Salt Lake and Weber Counties, but was more severe in Cache County than for several years. Adults began emerging in the Parma area of Canyon County in southwestern Idaho during the first week of June, and by the end of the month, moderate adult feeding damage to foliage was observed on most elm trees. Larval emergence began about the first week of July (some 2 weeks later than that recorded in previous years) and numerous elms were largely defoliated from larval attack by mid-July. General infestations developed in Jerome County, Idaho, during July and larval feeding damage was severe. By the end of the month conspicuous defoliation of elms had occurred in all areas of southern Idaho. In Oregon, elm leaf beetle was abundant and noticeably damaging to elms all over the State during 1959.

Elm leaf beetle severely damaged elms in the eastern half of Dodge City, Ford County, Kansas, being more severe on Chinese elm than on American elm. A survey in the southwestern area of the State indicates that this is definitely an isolated infestation. Infestations of this beetle became more widespread throughout Oklahoma during 1959. Heavy defoliation occurred throughout the east central and central areas of that State, with additional reports coming from several new localities in the south central and west central areas. Populations over Oklahoma were considerably heavier than were noted during 1958. In Arkansas elm leaf beetle continued to be a serious pest of Chinese elms and, in some instances, on American elms during 1959. The pest was very numerous in the southern half of Illinois and caused much browning and premature dropping of leaves, especially on Chinese elms. Eggs, larvae and adults were present in Greene County by May 27. This leaf beetle was also exceptionally heavy on Chinese elms in Indiana from Lafayette south, and many trees were completely brown as a result of larval feeding in August. In Delaware, adults and eggs were first found in Sussex County on May 15 and extensive injury from this pest occurred only in sections of this county during June and early July. Elm leaf beetle was heavier in Providence County, Rhode Island, by mid-July than it had been for several years.

Also in Rhode Island, IMPORTED WILLOW LEAF BEETLE (Plagiodera versicolora) was abundant on willow, with adults appearing by mid-July in South Kingstown, Washington County. Larvae and adults of this beetle were common throughout most of Delaware and caused moderate injury to willows in most areas during May and June. In New Castle County, LOCUST LEAF MINER (Chalepus dorsalis) adults were present and feeding on black locust the first week of May. Subsequent larval mining and adult feeding injury were only moderate during the 1959 season. In Illinois, locust leaf miner was extremely abundant on black locust near Havana, Mason County, July 8; practically all leaves had turned brown. The beetles migrated to nearby soybeans shortly afterwards and did considerable leaf feeding. Moderate to heavy infestations of ELM CALLIGRAPHA (Calligrapha scalaris) damaged elms in central and south central Oklahoma and an infestation in South Dakota damaged American and Chinese elms in Davison County. Another LEAF BEETLE (Anomoea laticlavia) severely injured honeylocust early in the season in many localized areas over a large part of Texas. In Oklahoma, TWIG GIRDLER (*Oncideres cingulata*) caused widespread damage to a variety of shade trees in east central north central and central areas of the State; and in Utah, LOCUST BORER (*Megacyllene robiniae*) damage again increased in Salt Lake County, with many desirable trees being killed or damaged. MAY BEETLES (*Phyllophaga* spp.) were stripping foliage from elm, persimmon and oak in northern Louisiana during May. WOOD BORING BEETLES caused some damage to maple, ash, poplar, willow and locust trees in Utah during 1959, and unspecified CURCULIONIDS were heavy on most nut-bearing trees in Arkansas.

Several species of APHIDS were damaging to some degree in various areas of the Nation during 1959. In California, an ELM APHID (*Myzocallis pulchellus*) was found on street elms in Auburn, Placer County, for a new State record. Another APHID, *M. elegans*, was found for the first time at the same locality infesting a limited number of the same host. This species was previously taken in Sacramento in 1932. NORWAY-MAPLE APHID (*Periphyllus lyropictus*) caused normal or below-normal damage to shade trees in Utah. In Idaho, overwintering eggs of this species completed hatching by April 17 and heavy infestations developed on maples in Franklin and Latah Counties during June. By July, additional infestations had developed in many southwestern parts of the State. PAINTED MAPLE APHID (*Drepanaphis acerifoliae*) occurred in Nevada in above-normal numbers on maples. Populations on maples in Delaware were abundant by mid-May and all stages and forms remained rather numerous throughout most of the season, particularly in New Castle County. Leaf-curl injury caused by WOOLLY ALDER APHID (*Prociphilus tessellatus*) to silver maples in Sussex County, Delaware, was rather severe during mid-June; and the species appeared in outbreak numbers on the same host in central sections of Maryland during 1959.

A LEAF-CURL ASH APHID (*P. fraxinifolii*) caused normal or below-normal damage to shade trees in Utah. Another LEAF-CURL APHID (*P. fraxini-dipetalae*) was particularly heavy on ash trees in Marin and Sacramento Counties, California, but populations were light in other areas of the State; street trees were mainly affected. WOOLLY APPLE APHID (*Eriosoma lanigerum*) colonies on elms during May and June in southern Sussex County, Delaware, were very heavy, causing extensive leaf curl; and WOOLLY ELM APHID (*E. americanum*) was normally damaging in Utah, often being heavily parasitized. TULIPTREE APHID (*Macrosiphum liriodendri*) populations were building up in Delaware by May 15 and became very abundant this season in New Castle County during June. In Florida, a HICKORY APHID (*Longistigma caryae*) infested oaks at various points in the State during February. Aphids generally were unusually abundant on many varieties of shade trees in Utah, with those species on beech and linden being very abundant, especially in the fall. Willows and narrow leaf poplars were sometimes severely infested and galls caused by *Pemphigus* spp. were conspicuous in parts of the Uintah Basin. Leaves folded by *Thecabius populi-conduplifolius* and *T. populi-monilus* were common in several northern Utah counties. *T. populi-conduplifolius* was moderately heavy on poplars in Colfax and Taos Counties, New Mexico; and a PHYLLOXERA, probably *Phylloxera popularia*, was especially heavy on young poplar trees in Dona Ana, Otero and Chaves Counties, with twigs and branches covered with "cotton" from these insects.

COCCIDS were also of some concern on shade trees during the 1959 season. One of the principal species was EUROPEAN ELM SCALE (*Gossyparia spuria*).The pest was a problem in many areas of California on street elms, with honeydew being annoying to residents. Control measures were effective, when applied in time. This scale insect was generally common throughout the southern portion of Idaho, with extremely heavy infestations noted on elms in the Twin Falls area of Twin Falls County during early June; and many trees and shrubs were also damaged in Wyoming during 1959. European elm scale caused local normal damage in Utah during the 1959 season and built up on elms in New Mexico during the summer in Bernalillo, Santa Fe and Rio Arriba Counties.

European elm scale continued to be the number one pest of elms in the western portion of Kansas; however, in some locations, much of the injury may have been due to large populations of ELM SCURFY SCALE (Chionaspis americana). European elm scale caused damage to elm trees in Minnehaha and Lawrence Counties, South Dakota, during 1959, and commonly affected elms in Wisconsin, although incidence in this State appears to have decreased. Crawlers were very common in Delaware during August in sections of New Castle County on elms, heavy infestations causing death of some trees.

An outbreak of COTTONY MAPLE SCALE (Pulvinaria innumerabilis) occurred in the northern portion of Ohio and was found in unusual numbers on silver maples throughout Indiana. The insect was very heavy and widespread on soft maple in Illinois. In 1959 it commonly affected maples in Wisconsin where it appeared to increase in incidence. The species remained a problem and continued serious over most of Minnesota, especially in Edina, Hopkins and St. Louis Park in the Twin City area. It also damaged many trees and shrubs throughout Wyoming.

In Delaware, TULIPTREE SCALE (Toumeyella liriodendri) was rather abundant during the 1959 season on some tuliptrees in New Castle County; and PUTNAM SCALE (Aspidiotus ancylus) caused concern on elms in Maryland. GOLDEN OAK SCALE (Asterolecanium variolosum) was generally heavy in California on oak in San Joaquin, Santa Cruz and Lake Counties, while another scale insect, Stomacoccus platani, occurred generally in the State, with heavy infestations in San Mateo, Sacramento and Santa Barbara Counties. Several species of Lecanium were unusually heavy in Indiana on hickory, oak and other shade and ornamental trees.

Several other pest species were of concern on shade trees during 1959. A MIRID (Labopidea ainsliei), reported for the first time from North Carolina, was abundant on Moraine locust in Wake County, causing defoliation during early June. SYCAMORE LACE BUG (Corythucha ciliata) caused severe bleaching and considerable defoliation of sycamores in Kansas; while in Rhode Island, the pest became extremely heavy in West Warwick, Kent County. Populations were very high during 1959 on sycamores and London planetrees in Delaware. Large numbers were present and caused leaf injury as early as mid-May and populations remained high most of the season, causing rather extensive yellowing and leaf curling. PERIODICAL CICADA (Magicicada septendecim) was present throughout the southern two-thirds of Illinois and caused considerable flagging of trees in some localities. Unspecified species of LEAFHOPPERS were quite numerous on redbud in Illinois. Moderate to heavy populations were noted on many of the common shade trees in Kansas, but no attempt was made to collect and identify specimens. Leafhoppers also caused moderate injury and discoloration to elm foliage in Utah, with pussy willow discolored at Nephi, Juab County, and at Provo, Utah County. Various leafhoppers were unusually abundant on many broad-leaf trees in Nevada, especially poplar and willow; and leaves of sycamore were turned brown and dropped prematurely in southwestern Washoe County due to Caladonus coquilletti.

A LEAF MINER (Obolodiplosis robiniae) was very abundant in Delaware, causing considerable rolling of leaf margins of black locust in western Kent County during mid-May. Light to moderate infestations of a GALL MIDGE (Itonida ocellaris) caused light damage to maples in Franklin, Hancock County, Maine, during August. Moderate infestations of another GALL MIDGE (Dasyneura gleditschiae) caused moderate damage to honeylocust trees in most areas of Nebraska. Throughout Texas, several species of GALL INSECTS were numerous on various species of trees during the 1959 season.

The appearance of a SPIDER MITE (Oligonychus aceris) on a nursery property in Riverside County, California, early in the fall of 1959, was the first record of this species in the State. Detection efforts revealed infestations in several locations on silver maples in Riverside, Los Angeles, San Bernardino, Orange and El Dorado Counties. In Utah, another SPIDER MITE, Eotetranychus weldoni, was responsible for substanial discoloration of weeping willow, black willow and other willow foliage; and still another species, Oligonychus coniferarum, caused much discoloration and some defoliation of junipers throughout Kansas during June, July and August. In Rhode Island, many inquiries were received during May and June concerning MAPLE BLADDER-GALL MITE (Vasates quadripedes).

In Delaware, WILLOW SAWFLY (Nematus ventralis) larvae were extremely abundant in some areas of Sussex County, causing complete defoliation of willows in one particular area during mid-June. Infestations were also noted in western Kent County during mid-May. ELM LEAF MINER (Fenusa ulmi) was active and common throughout Minnesota during 1959.

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